UNITED STATES ENVIRONMENTAL PROTECTION AGENCY
REGION 5
77 WEST JACKSON BOULEVARD
CHICAGO, IL 60604-3590

Date: July 11, 1996

REPLY TO THE ATTENTION OF

MEMORANDUM

Subject: **Response and Comments to Report by Robert Bornschein, April 1996, "The Effectiveness of Soil Removal on Lead Exposure in Granite City" [the 1994-95 Granite City Study.]**

From: Brad Bradley, RPM BB

To: NL Industries Site Administrative Record

U.S. EPA hereby responds to the report by Robert Bornschein, April 1996, "The Effectiveness of Soil Removal on Lead Exposure in Granite City" [the 1994-95 Granite City Study.]

Specific Comments

1. U.S. EPA disagrees with the statement on the bottom of page 1 that "The study revealed two sources of lead contamination not considered by U.S. EPA in the Agency's formulation of a risk management strategy: lead-based paint and street dust transported from the NL/Taracorp site...".

U.S. EPA is considering lead-based paint and street dust in its remedy for the site. Consistent with the July 14, 1994 "Revised Interim Soil Lead Guidance for CERCLA Sites and RCRA Corrective Action Facilities", U.S. EPA has taken and will continue to take a multi-media approach to addressing the lead contamination at the NL Site. Activities that have been taken in conjunction with residential soil removal are HEPA vacuuming of homes after soil cleanup to remove interior lead dust, paving of a truck lot that was a source of fugitive lead dust, spraying of the B V & G truck lot located at 16th and State Street to minimize fugitive lead dust emissions, and working with the Illinois Department of Public Health (IDPH) to identify lead paint problems and recommend solutions to residents whose yards were scheduled to be remediated. Actions that will be taken in the future are street sweeping in the cleanup zone, capping of the Taracorp pile, and, subject to funding, interior and exterior lead-based paint stabilization/abatement. EPA agrees that lead-based paint is a problem that should be addressed in some of the homes at the site; however, the extent of the problem has been overstated. The mere presence of lead in a paint sample as measured by a device that is capable of detecting lead several layers deep in the painted surface does not constitute a problem. The paint must be in a state of disrepair such that the lead comes in contact with the child in order for a problem to exist. In other words, there must be a pathway form the lead paint to the

residents of the home. The number of homes that contain paint in a deteriorated condition is significantly less than the number of homes that simply contain measured lead-based paint.

2. U.S. EPA disagrees with the statement on the top of page 2 that "Ongoing contamination of soil resulting from the transport of lead from the Taracorp site (by either wind action or by trucks traveling through the city from the Taracorp site) is also likely".

The contamination of soil resulting from the transport of lead from the Taracorp site is insignificant. The Taracorp pile is sprayed with a dust suppressant, and air monitoring in the vicinity of the site has shown lead levels that are continually well below (approximately one-tenth) the National Ambient Air Quality Standard (NAAQS) for Lead. (See Air Metals Monitoring Data generated by Illinois EPA during 1991 - 1995; Second Supplement to the Administrative Record Doc. # 11). This situation is drastically different than the situation that created the soil lead contamination problem in the first place. The levels of lead in the yards nearest the site peak at around 3500 parts per million (ppm). These levels resulted from over 40 years of operation of a smelter that emitted lead in the air at levels that were unregulated for over 30 years and were approximately five times the lead air standard when regulations were adopted. The area around the NL Site was a nonattainment area for the lead NAAQS until the smelter was shut down in 1983. Additionally, for approximately three years, St. Louis Lead Recyclers were emitting fugitive lead dust from excavating portions of the Taracorp pile to recover lead. Lead air emissions from the current situation are not significant from a regulatory standpoint or a recontamination standpoint.

3. U.S. EPA believes that the argument raised in the first full paragraph of page 2 that remediation activities have increased dust levels substantially at most of the dwellings evaluated is absurd. Notwithstanding the fact that this conclusion was based on data from only five homes, three of which increased and two of which decreased, it makes no sense that house dust levels will increase over the long-term after EPA has removed one of the two most significant sources of lead (i.e. soil). Removing part of the problem will surely help, not increase, the problem. Given the inherent variability of dust lead levels over the short-term, the only fair way to assess remedial impacts on interior house dust levels is over a period of several years. This was not done in the 1994-95 Granite City Study. Additionally, results of all air monitoring conducted during the yard cleanups indicates that U.S. EPA remedial activities are not causing any short-term lead dust problems. (See Perimeter Yard Air Metals Monitoring Data generated by OHM Corporation from April 1993 to present; Second Supplement to the Administrative Record Doc. # 12).

4. U.S. EPA disagrees with the statement in the first full paragraph of page 2, that the study results revealed that the soil itself becomes recontaminated after the completion of abatement activities. Upon review of Table B-2 of the 1994-95 Granite City Study, U.S. EPA concludes that this inference is based on one sample result, at 1443 Grand. EPA resampled this residence and found "midyard" lead contamination levels to be less than 30 ppm, rather than 4257 ppm as indicated in the 1994-95 Granite City Study. (See Memorandum Report by OHM Corporation; Second Supplement to the Administrative Record Doc. # 6). The U.S. EPA sampling result seems to be consistent with the other 31 post-remediation mid-yard samples collected during the 1994-95 Granite City Study, since four were between 100 and 160 ppm, 10 were between 50 and 99 ppm, and 17 were less than 50 ppm lead. Even Mr. Bornschein stated that "the study that I've conducted really doesn't provide evidence for or against recontamination at the present time." (See video of June 25, 1996 City Council Meeting; Second Supplemet to the Administrative Record Doc. #18).

5. U.S. EPA's review of Table 5-5 on page 20 indicates that there are not 38 post-remediation soil lead samples collected in the 1994-95 Granite City Study. There are only 32, as stated in the previous comment. The following addresses (and mid-yard sampling results in parentheses) were included in the data set but were not remediated by EPA prior to sampling: 1630 Cleveland (142 ppm lead), 1621 Delmar (354 ppm lead), 1635 Delmar (689 ppm lead), 1638 Delmar (44 ppm lead), 1640 Delmar (28 ppm lead), and 1438 Grand (1770 ppm lead). It is not clear why these errors exist in table 5-5 and table B-2, but including these results clearly affects the conclusions drawn regarding recontamination of yards after remediation. As stated above, EPA does not see any evidence of post-remediation yard recontamination with lead; rather, the results of the 1994-95 Granite City Study indicate that U.S. EPA has performed yard remediation effectively.

6. Based upon the limited data U.S. EPA has, EPA would like to make the following general comment. U.S. EPA has reservations about the sampling methods and integrity of the sampling procedures used to generate some of the data used in the 1994-95 Granite City Study.

First, as is discussed above in paragraph 4, at least one of the sample results reported in the 1994-95 Granite City Study (1443 Grand) appears to be incorrect. The fact that this sample result was not discussed as a possible anomaly or outlier casts doubt as to the data quality assurance methods employed in the study.

Second, as is shown in the OHM Corporation field activities oversight memorandum report of "REACT activities" dated October 1994, it appeared that the field crew did not follow proper decontamination procedures and the sample containers (i.e., buckets) for several samples appeared to have the wrong addresses indicated on them on the days observed. (See Second Supplement

to the Administrative Record Doc. #9 & #10). OHM is the contractor hired to perform the residential remediation by the United States Army Corps of Engineers under the authority of U.S. EPA. REACT is apparently the contractor hired to collect the data for the 1994-1995 Granite City study.

Last, no specific sampling procedures or quality assurance plan have been documented in the report for the soil sampling. It is not clear if the samples were composited, from what depth the samples were collected and whether the dripline sample was included in the sample. In the absence of this information, the quality of data in the 1994-95 Granite City Study cannot be determined.

7. Technical review of the 1994-95 Granite City Study by Dr. Allan Marcus, United States Environmental Protection Agency, National Center for Environmental Assessment, Research Triangle Park (Second Supplemnt to the Administrative Record Doc. #5) describes that the Granite City Study is inconclusive because it is based on limited data; however even given the limited data the supports the conclusion that that 1) there is no evidence of recontamination, and 2) the effect of soil remediation has reduced childhood lead exposure through reduction in soil concentrations and reduction in dust lead loading.